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EXAMINER

RAHMJOO, MANUCHER

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,891

Applicant(s)

SASAKI ET AL.

Examiner

Mike Rahmjoo

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 24-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 24-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 29- 38 been renumbered as 24- 33.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 4 line 13 on page 5 recites "...of the pixels...". It is not clear which pixels are being made of the reference.

As per claim 4 line 16 on page 5 recites "...and being based on...". It is not clear what is being subjected to as "based on".

As per claim 4 line 17 on page 5 recites "...ideal straight line..." and line 19 of the same page recites "... line part is curved...". It is not clear how any approximation can be made while the ideal line is straight and curved at the same time.

Claims 10 and 16 have similar rejections.

Further clarification of above and other possible claims is respectfully requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1- 21 and 24- 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Naoi et al , US Patent 6,683,617, hereinafter, Naoi.

As per claims 1,7,13,19,20,24- 28, 30- 31 and 33 Naoi teaches extracting means

for extracting data representing a predetermined line part or visually important portion from data representing a three dimensional image see for example block 32 (subline segmenting unit 32) of fig 1 and column 6 lines 4- 9 and lines 24- 30 and; an image rendering means for rendering an the three dimensional image see for example unit 4 of fig 1; and antialiased image forming means for forming an antialiased image portion by antialiasing the extracted data see for example the abstract and column 11 lines 40- 50; and overwriting means for overwriting the antialiased image portion onto a corresponding portion of the rendered image see for example figure 7 block 105; and inherently teaches a computer readable storage medium (memory and HD) for storing a computer program for operating an apparatus to perform an image rendering method and distribution means (FD or CD) for distributing the computer program stored on the computer readable storage medium see for example the image processing apparatus of claim 1.

As per claims 3,9, and 15 Naoi teaches said image rendering means renders the three-dimensional image using polygon information that represents the three-dimensional image see for example unit 4 of figure 1, and said extracting means extracts the data representing the predetermined line part by extracting a corresponding part of the polygon information see for example block 32 of figure 1.

As per claims 4,10, and 16 Naoi teaches the predetermined line part passes through a plurality of pixels (see for example figures 2- 6 through the passage of sublines 1- 4 through the subpixels), and said antialiased image forming means

generates pixel values for each of the plurality of pixels as a function of an occupancy value of that pixel (see for example column 6 lines 46- 51 which shows pixel values as a function of subpixels), the occupancy value of the pixel being based on a ratio of an area of an occupied portion of the pixel to an area of the pixel (see for example figures 6a- c with each having a certain ratio with associated percentage of occupancy), the area of the occupied portion of the pixel (see for example column 7 lines 18- 31) being based on an area occupied by a portion of the predetermined line part that passes through the pixel when the predetermined line part is a straight line and being based on an area occupied by an ideal straight line segment which approximates the portion of the predetermined line part when the predetermined line part is curved.

As per claims 5,11, and 17 Naoi teaches the portion of the predetermined line part or the ideal straight-line segment forms an angle with an X-axis, and said antialiased image forming antialiases a range of pixels along the X-axis when the angle is equal to or larger than a predetermined value; and antialiases a range of pixels, along a Y axis that is orthogonal to the X-axis when the angle is smaller than the predetermined value see for example figures 2- 6 and also polygon 2 regions A and B of figure 3 which has representations of X and Y coordinates through each subpixel further making corresponding angles with said axis.

As per claims 6,12, and 18 Naoi teaches each of the plurality of pixels is divided into a matrix of sub-pixels, and said antialiased image forming means determines the area of the occupied portion of the pixel in units of sub-pixel- areas see for example figures 2- 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,8,14,21, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kassila (US Patent 6,437,793) in view of Naoi.

As per claims 2,8,14,21, 29, and 32 Naoi does not teaches extracting means extracts data representing contour lines of the rendered three-dimensional image as the data representing the predetermined line part or extracts data representing the contour lines and contour candidates of the three-dimensional image as the data representing the predetermined line part.

However, Kassila teaches extracting means extracts data representing contour lines of the rendered three-dimensional image (see for example column 23 lines 28- 33) as the data representing the predetermined line part or extracts data representing the contour lines and contour candidates (see for example figure 41 the upper and lower loops of letter "B") of the three-dimensional image as the data representing the predetermined line part see for example figure 41.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings Kassila into Naoi to further

enhance the anti aliasing for the system and therefore produce a user friendly and versatile device .

Response to Arguments

Applicant's arguments with respect to claim1- 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure; 6,166,717, and 6,377,273.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

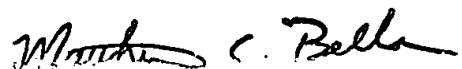
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is (703) 305-5658. The examiner can normally be reached on 6:30- 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (703) 308- 6829. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872- 9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Mike Rahmjoo

March 15, 2004



**MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**